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To: Examiner Lee A. Fineman

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Group Art Unit 2872

From: Walter Ottesen

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Message: The appellants herewith submit an appeal brief under 37 CFR 41.37 as follow-up to the notice of appeal filed on November 13, 2008.

Respectfully submitted,

Walter Ottesen
Reg. No. 25,544

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. 571-273-8300) on January 13, 2009.

Walter Ottesen

In the United States Patent and Trademark Office

Before the Board of Patent Appeals and Interferences

Appellants: C. Hauger et al	Group Art Unit: 2872
Patent Application Serial No: 09/780,375	Examiner: Lee A. Fineman
Filed: February 12, 2001	Attorney Docket: 00014
For: Surgical Microscope	

Appeal Brief under 37 CFR 41.37

On November 13, 2008, the appellants appealed from the final rejection of claims 41 to 52.

It will be shown below that these rejections are untenable and that the appealed claims 41 to 52 patentably distinguish the appellants' invention over the references applied thereagainst.

A Credit Card Payment Form (PTO-2038) for the required fee of $540.00 as set forth in 37 CFR §41.20(b)(2) is submitted herewith. The Commissioner is authorized to charge any deficiency of payment to Deposit Account No. 15-0773.

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Real Party of Interest

The real party of interest in this application is the assignee, Carl-Zeiss-Stiftung Heidenheim/Brenz, a foundation organized and existing under the laws of the Federal Republic of Germany, doing business under the firm name CARL ZEISS, and having its principal office at 73446 Oberkochen, Federal Republic of Germany. The assignee acquired its interest by virtue of an assignment executed by the appellants and recorded by the Assignment Branch of the United States Patent and Trademark Office at reel 011643, frame 0221.

Notwithstanding the assignment, the appellants, Christof Hauger, Ulrich Gold, Christian Lücke, Margit Krause-Bonte, Dirk L. Brunner and Martin Pelzer, remain a party of interest because of the German law (Gesetz über Arbeitnehmererfindungen) covering employed inventors.

Related Appeals and Interferences

Appellants' attorney is unaware of any other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Rejected Claims: 41 to 52

Allowed Claims: None

Withdrawn Claims: None

Claims Cancelled: 1 to 40

The appealed claims are 41 to 52 and correspond to the claims 41 to 52 as they appear in the amendment after final action filed on October 7, 2008 and are set forth in the Claims Appendix attached hereto.

Status of Amendments

An amendment after final action was filed on October 7, 2008 and claims 41 to 52 continue to be rejected as noted in the advisory action mailed on October 22, 2008. The amendment after final action will be entered for the purposes of appeal as noted in said advisory action.

Summary of the Claimed Subject Matter

Claim 41

The appellants' invention in independent claim 41 is directed to a surgical microscope (1, 301) comprising: (Page 5, line 3; page 7, lines 29 and 30; FIGS. 1 and 6)

a viewing unit (3, 303) for viewing an object (5, 305) and said viewing unit defining a viewing beam path (21, 321); (Page 5, lines 3 and 4; FIGS. 1 and 6).

an image data supply (9, 309) for supplying image data; (Page 5, lines 4 and 5; page 8, line 1; FIGS. 1 and 6)

an image projection module (7, 307) connected to said image data supply (9, 309) for receiving said image data and inputting said image data into said viewing beam path (21, 321); (Page 5, lines 12 and 13)

said image projection module (7, 307) including an image display unit (11, 311) for displaying said image data; (Page 5, lines 5 to 8; FIGS. 1 and 6)

a first beam splitter (13, 313) mounted in said viewing beam path (21, 321) for receiving said image data displayed by said display unit (11, 311) and passing said image data into said viewing beam path (21, 321); (Page 5, lines 5 to 8; FIGS. 1 and 6)

an image recording module (27, 327) for recording said image data and an object image of said object supplied by said viewing unit; (Page 7, line 29 to page 8, line 2)

said image recording module (327) including an image sensor (325); (Page 8, line 2; FIGS. 1 and 6)

a second beam splitter (314) mounted in said viewing beam

path (321) for directing said object image onto said image sensor (325); (FIG. 6)

said image sensor (25, 325) generating an image signal from said object image; (Page 5, lines 16 to 19; FIGS. 1 and 6)

said image recording module (327) further including a mixer (340) connected to said image sensor (325) for receiving said image signal and being connected to said image data supply (309) for receiving said image data to mix said image signal and said image data and generate an output signal; (Page 8, lines 3 to 6; FIG. 6)

a video-recorder/monitor (29, 329) connected to said mixer (340) for receiving said output signal for display to a surgeon; and, (Page 5, lines 16 to 19; FIGS. 1 and 6)

a shutter (350) interposed between said first beam splitter (313) and said object to suppress said object image to facilitate viewing said image data in said viewing unit. (Page 8, lines 3 to 7; FIG. 6)

Claim 42

Claim 42 is dependent from claim 41 and recites that said image projection module (307) further including an imaging optic having a plano-convex lens (37) and a plano-concave lens (33) mounted downstream of said image display unit (11, 311) for transmitting said image data to said first beam splitter (13, 313). (Page 6, line 30, to page 7, line 2; FIG. 2)

Claim 43

Claim 43 is dependent from claim 42 and recites that said

plano-concave lens (37) is disposed downstream of said image display unit (11, 311) and said plano-convex lens (37) is interposed between said plano-concave lens (33) and said first beam splitter (13, 313). (Page 6, line 30, to page 7, line 2; FIG. 2)

Claim 44

Claim 44 is dependent from claim 43 and recites that said image display unit (11, 311) is an LCD image display unit. (Page 6, lines 7 and 8)

Claim 45

Claim 45 is dependent from claim 44 and recites that said plano-convex lens (37) has a first focal length and said plano-concave lens (33) has a second focal length; and, the ratio of said first focal length and said second focal length lies within a range from 1.9 to 2.5. (Page 6, lines 2 to 5)

Claim 46

Claim 46 is dependent from claim 45 and recites that said plano-convex lens is a first plano-convex lens (37); said image projection unit further includes a concave-convex lens (35) and a second plano-convex lens (31); and, said first plano-convex lens 37), said plano-concave lens (33), said concave-convex lens (35) and said second plano-convex lens (31) all are arranged between said LCD image display unit (11, 311) and said first beam splitter (13, 313). (page 5, line 30, to page 6, line 2; FIG. 2)

Claim 47

Claim 47 is dependent from claim 44 and recites that the brightness of said LCD image display unit is increased by providing a time-dependent sequential illumination of a reflection display with only a single color. (Page 4, lines 3 to 8)

Claim 48

Claim 48 is dependent from claim 44 and recites that said LCD image display unit includes a reflection display illuminated sequentially with different colors as a function of time. (Page 3, lines 17 to 20)

Claim 49

Claim 49 is dependent from claim 41 and recites that said image sensor is a CCD chip. (Page 6, lines 21 and 22)

Claim 50

Claim 50 is dependent from claim 41 and recites that said image display unit incorporates a reflection display (411) driven at a clock frequency (442) and includes a rotatably mounted filter wheel (446) for illuminating said reflection display (411); and, a device for synchronizing the rotation of said filter wheel (446) with said clock frequency of said reflection display (411). (Page 8, paragraph added between lines 7 and 8 with amendment filed March 10, 2003)

Claim 51

The appellants' invention in independent claim 51 is directed to a surgical microscope (1, 301) comprising: (Page 5, line 3; page 7, lines 29 and 30; FIGS. 1 and 6)

a viewing unit (3, 303) for viewing an object (5, 305) and said viewing unit defining a viewing beam path (21, 321); (Page 5, lines 3 and 4; FIGS. 1 and 6)

an image data supply (9, 309) for supplying image data; (Page 5, lines 4 and 5; page 8, line 1; FIGS. 1 and 6)

an image projection module (7, 307) connected to said image data supply (9, 309) for receiving said image data and inputting said image data into said viewing beam path (21, 321); (Page 5, lines 12 and 13)

said image projection module (7, 307) including an image display unit (11, 311) for displaying said image data; (Page 5, lines 5 to 8; FIGS. 1 and 6)

a first beam splitter (13, 313) mounted in said viewing beam path (21, 321) for receiving said image data displayed by said display unit (11, 311) and passing said image data into said viewing beam path (21, 321); (Page 5, lines 5 to 8; FIGS. 1 and 6)

an image recording module (27, 327) for recording said image data and an object image of said object supplied by said viewing unit; (Page 7, line 29 to page 8, line 2)

said image recording module (327) including an image sensor (325); (Page 8, line 2; FIGS. 1 and 6)

a second beam splitter (314) mounted in said viewing beam path (321) for directing said object image onto said image

sensor (325); (FIG. 6)

said image sensor (25, 325) generating an image signal from said object image; (Page 5, lines 16 to 19; FIGS. 1 and 6)

said image recording module (327) further including a mixer (340) connected to said image sensor (325) for receiving said image signal and being connected to said image data supply (309) for receiving said image data to mix said image signal and said image data and generate an output signal; (Page 8, lines 3 to 6; FIG. 6)

a video-recorder/monitor (29, 329) connected to said mixer (340) for receiving said output signal for display to a surgeon; (Page 5, lines 16 to 19; FIGS. 1 and 6)

said image projection module (7, 307) further including an imaging optic having a plano-convex lens (37) and a plano-concave lens (33) mounted downstream of said image display unit for transmitting said image data to said first beam splitter (13, 313); and, (Page 6, line 30, to page 7, line 2; FIG. 2)

said image display unit having a reflection display (411) driven at a clock frequency (442) and including a rotatably mounted filter wheel (446) for illuminating said reflection display (411); and, a device for synchronizing the rotation of said filter wheel (446) with said clock frequency of said reflection display (411). (Page 8, paragraph added between lines 7 and 8 with amendment filed March 10, 2003; FIG. 7)

Claim 52

The appellants' invention in independent claim 52 is

directed to a surgical microscope (1, 301) comprising: (Page 5, line 3; page 7, lines 29 and 30; FIGS. 1 and 6)

a viewing unit (3, 303) for viewing an object (5, 305) and said viewing unit defining a viewing beam path (21, 321); (Page 5, lines 3 and 4; FIGS. 1 and 6)

an image data supply (9, 309) for supplying image data; (Page 5, lines 4 and 5; page 8, line 1, FIGS. 1 and 6)

an image projection module (7, 307) connected to said image data supply (9, 309) for receiving said image data and inputting said image data into said viewing beam path (21, 321); (Page 5, lines 12 and 13)

said image projection module (7, 307) including an image display unit (11, 311) for displaying said image data; (Page 5, lines 5 to 8; FIGS. 1 and 6)

a first beam splitter (13, 313) mounted in said viewing beam path (21, 321) for receiving said image data displayed by said display unit (11, 311) and passing said image data into said viewing beam path (21, 321); (Page 5, lines 5 to 8; FIGS. 1 and 6)

an image recording module (27, 327) for recording said image data and an object image of said object supplied by said viewing unit; (Page 7, line 29 to page 8, line 2)

said image recording module (327) including an image sensor (325); (Page 8, line 2; FIGS. 1 and 6)

a second beam splitter (314) mounted in said viewing beam path (321) for directing said object image onto said image sensor (325); (FIG. 6)

said image sensor (25, 325) generating an image signal from

said object image; (Page 5, lines 16 to 19; FIGS. 1 and 6)

said image recording module (327) further including a mixer (340) connected to said image sensor (325) for receiving said image signal and being connected to said image data supply (309) for receiving said image data to mix said image signal and said image data and generate an output signal; (Page 8, lines 3 to 6; FIG. 6)

a video-recorder/monitor (29, 329) connected to said mixer (340) for receiving said output signal for display to a surgeon; (Page 5, lines 16 to 19; FIGS. 1 and 6)

a shutter (350) interposed between said first beam splitter (313) and said object to suppress said object image to facilitate viewing said image data in said viewing unit; (Page 8, lines 3 to 7; FIG. 6)

said image projection module (7, 307) further including an imaging optic having a plano-convex lens (37) and a plano-concave lens (33) mounted downstream of said image display unit for transmitting said image data to said first beam splitter (13, 313); and, (Page 6, line 30, to page 7, line 2; FIG. 2)

said image display unit having a reflection display (411) driven at a clock frequency (442) and including a rotatably mounted filter wheel (446) for illuminating said reflection display (411); and, a device for synchronizing the rotation of said filter wheel (446) with said clock frequency of said reflection display (411). (Page 8, paragraph added between lines 7 and 8 with amendment filed March 10, 2003; FIG. 7)

Grounds of Rejection to be Reviewed on Appeal

This appeal brief is directed to the issues presented in the Examiner's final action mailed on July 14, 2008 responding to the appellants' arguments in the amendment filed on April 3, 2008. The issues raised by the Examiner in the advisory action are also considered.

Claims 41, 44 and 49 were rejected under 35 USC 103(a) as being anticipated by Miyagi in view of Zonneveld.

Claims 47, 48 and 50 were rejected under 35 USC 103(a) as being unpatentable over Miyagi in view of Zonneveld as applied to claim 44 and further in view of Ernstoff et al.

Claims 42, 43, 45 and 46 were rejected under 35 USC 103(a) as being unpatentable over Miyagi in view of Zonneveld as applied to claims 41 and 44 and further in view of Arai.

Claims 51 and 52 were rejected under 35 USC 103(a) as being unpatentable over Miyagi in view of Zonneveld and Arai as applied to claim 42 and further in view of Ernstoff et al.

Argument

Claims 41, 44 and 49 had been rejected under 35 USC 103(a) as being unpatentable over Miyagi in view of Zonneveld. The following will show that independent claim 41 patentably distinguishes the appellants' invention over this combination of references.

On page 4 of the final action, Miyagi is characterized as having:

> "... an imaging recording module (20 and 25) for recording said data image (from 28a-c) and an object image (from 23) of said object (not shown); "

Appellants respectfully disagree with the above characterization of elements 20 and 25 of Miyagi. Item 20 is an endoscope used to obtain an image of an organ of a patient. The endoscope 20 is described in Miyagi in column 2, lines 40 to 53, as follows:

> "More specifically, this endoscope 20 has a body 21 and a hard-tube 22 extending from the body 21. The tube 22 has an illuminating window and an observing window (both not shown) formed in a distal end of the tube 22. An illumination light is supplied from the illuminating window through a bundle of optical fibers extending through the body 21 and the tube 22. An image sensor 23 such as a CCD or the like is faced with the observing window through a lens. This image sensor 23 is connected to a control unit 25 (control means) through signal wires 24. This control unit 25 is operated to control the image sensor 23, prepares a television signal based on a picture signal from the image sensor 23 and sends it to the monitor television 30." (emphasis added)

From the above, it can be seen that the endoscope supplies

light to the area of interest in the patient and sends back an image which is converted into an electrical signal by an image sensor 23 at the distal end of the endoscope. As shown in FIG. 2 of Miyagi, this signal passes via signal wires 24 to the control unit identified by reference numeral 25. A sphygmomanometer 28a, a heartbeat meter 28b and electroencephaloscope 28c are all connected by separate wires to the control unit 25.

The control unit 25 can in no way be interpreted as part of a recorder but instead functions to prepare a picture signal indicative of a numeric figure based on blood pressure data obtainable from the sphygmomanometer 28a and prepares a picture signal representative of a numeric figure and a waveform based on heartbeat data obtainable from the heartbeat meter 28b and prepares a picture signal indicative of a waveform based on brain wave data obtainable from the electroencephaloscope 28c.

As noted in Miyagi, starting at column 2, line 64, the control unit combines the signals obtained from sphygmomanometer 28a, heartbeat meter 28b and electroencephaloscope 28c and combines them:

> "... with the picture signal from the image sensor (23), and sends them to the monitor television 30. As a consequence, the numerical figures and waveforms are displayed in a certain area, for example, a right and down corner area of the screen of the monitor television 30." (parenthetical numeral added)

From the above, it can be seen that the elements 20 and 25, which are viewed as being an image recording module in the action, are really an image data supply for supplying image data to the micro-monitor television 30 which is referred to in Miyagi

as the image display means as noted at column 2, line 30.

Accordingly, there is nothing equivalent in Miyagi to the appellants' image recording module which is set forth in appellants' claim 41 with the clause:

> "an image recording module for recording said image data and an object image of said object supplied by said viewing unit;"

Turning now to appellants' FIG. 6, the image data is taken from the image data supply 309 and is fed into a mixer 340 and the object image is supplied via the second beam splitter 314, lens 323 and image sensor 325. The output of image sensor 325 is also fed to the mixer 340. The output of the mixer is fed to the video-recorder/monitor 329. No such circuitry is suggested in Miyagi or the secondary reference, Zonneveld.

The control unit 25 in Miyagi is characterized in the action as a mixer. The control unit 25 is not a mixer in the sense of supplying the image data to an external recorder/monitor but is instead part of image data supply because this is fed into the microscope 10 for viewing by the surgeon in the same manner as the image data supply 309 supplies image data into the beam path of the surgical microscope in the appellants' invention. In contrast to Miyagi, the object image in the appellants' invention is taken from the viewing beam path of the surgical microscope via the beam splitter 314 as explained above and fed to the mixer 340. Even if the control unit 25 could be deemed to be a mixer, it is nonetheless part of the image data supply and is not a unit as in the appellants' invention wherein at least one input is from a very different source, namely, directly from the

viewing beam path.

In the action, the view is expressed on page 4, last four lines, that:

> "Miyagi discloses the claimed invention except for the object image being supplied from by said viewing unit; a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor."

The above is only a portion of what Miyagi does not show and appellants respectfully submit that Miyagi does not disclose all of the features and limitations set forth in the following clauses of claim 41 which is much more than the above two features noted in the action. Stated otherwise, Miyagi does not disclose the following features of claim 41:

> "an image recording module for recording said image data and an object image of said object supplied by said viewing unit;
>
> said image recording module including an image sensor;
>
> a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor;
>
> said image sensor generating an image signal from said object image;
>
> said image recording module further including a mixer connected to said image sensor for receiving said image signal and being connected to said image data supply for receiving said image data to mix said image signal and said image data and generate an output signal;
>
> a video-recorder/monitor connected to said mixer for receiving said output signal for display to a surgeon;"

Appellants submit that our person of ordinary skill would not be led to Zonneveld from an examination of Miyagi and no reason is given in the action as to why our person of ordinary skill would want to consult Zonneveld to combine the same with Miyagi.

Starting at the bottom of page 4 of the action, Zonneveld is referred to as disclosing:

> "... a surgical microscope (fig. 1) with a viewing unit (3) for viewing an object (20) and defining a viewing beam path (fig. 1); an image projection module (33) for supplying data in the form of a data image (column 6, lines 6-16), including an image display unit (34 and 35) for displaying the image data; and a beam splitter (37 and 38 and column 6, lines 32-65) mounted in said viewing beam path for receiving and passing said data image to said image sensor (40) and for directing said object image being supplied from by said viewing unit (fig. 1) onto said image sensor (column 6, lines 32-65)."

From the above, there is no suggestion in the action as to how our person of ordinary skill could integrate the above elements into Miyagi to come up with the appellants' invention. There is no suggestion in either Miyagi or Zonneveld of providing an image recording module, much less, an image recording module as shown in appellants' FIG. 6 and as set forth in appellants' claim 41.

Also, on page 5 of the action, the view is expressed that:

> "It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second beam splitter and image sensor to the system of Miyagi to be able to receive and combine an object image from the viewing path as taught by Zonneveld..."

In Zonneveld, starting at column 6, line 48, the video camera 40 or sensor:

> "... picks up the transmitted part of the visualization of the display unit (33) and the reflected part of the image of the operating field itself (20) and converts them into a video signal which is applied to a monitor 41." (parenthetical numerals added)

In Zonneveld, both the image data and the object image pass through the beam splitter so that here there is no second beam splitter in the sense of the appellants' invention.

In contrast to Zonneveld, appellants' claim 41 requires:

> "a second beam splitter (314) mounted in said viewing beam path (321) for directing said object image onto said image sensor (325);
>
> said image sensor (325) generating an image signal from said object image;" (parenthetical numerals added)

Thus, there is no second beam splitter devoted to an image sensor which, in turn, is connected to a mixer 340 as further provided in appellants' claim 41 with the clause:

> "said image recording module (327) further including a mixer (340) connected to said image sensor (325) for receiving said image signal and being connected to said image data supply (309) for receiving said image data to mix said image signal and said image data and generate an output signal;" (parenthetical numerals added)

From the above, it can be seen that the mixer receives image data from the image data supply and the image signal of the object from the separate image sensor 325.

Appellants respectfully submit that neither Zonneveld nor

Miyagi show or suggest a mixer as set forth above in appellants' claim 41.

On page 2 of the advisory action, the Examiner responds to the appellants' arguments by stating that the test for obviousness is what the combined teachings of the references would have suggested to those of ordinary skill in art.

For the reasons advanced above, appellants submit that this test for obviousness has not been met. The appellants have shown, for example, that elements 20 and 25 of Miyagi, which are viewed as being the equivalent of the image recording module of the appellants' invention, are not that at all but rather are an image data supply. The appellants have listed other elements set forth in claim 41 which are not present in Miyagi and are not suggested by Zonneveld. The appellants have shown that the combined teachings of Miyagi and Zonneveld would not enable those of ordinary skill in the art to arrive at the appellants' invention.

From the foregoing, it becomes apparent that with only Miyagi and Zonneveld to consult, our person of ordinary skill could not arrive at the appellants' invention as defined in claim 41. Accordingly, claim 41 should now patentably distinguish the appellants' invention over this combination of references and be allowable.

Claims 42 to 50 are all dependent from claim 41 so that these claims too should now be allowable.

Claims 51 and 52 were rejected under 35 USC 103(a) as being unpatentable over Miyagi in view of Zonneveld and Arai as applied to claim 42 and further in view of Ernstoff et al.

Claim 51 corresponds to claim 41 except that the image projection module and the image display are defined in greater detail and the shutter is not included. Claim 52 includes all of the features of claim 41 including the shutter and differs therefrom in that the image projection module and the display unit are defined as in claim 51. The arguments advanced with respect to claim 41 above show that Miyagi is defective and that Zonneveld cannot fill the void left thereby so that claims 51 and 52 should also be allowable.

Appellants add that the features of their image projection module (see FIG. 2) which are set forth in claims 51 and 52 include:

> "... an imaging optic having a plano-convex lens (37) and a plano-concave lens (33) mounted downstream of said image display unit (11) for transmitting said image data to said first beam splitter (13);"
> (parenthetical numerals added)

Arai was applied because it teaches a projection lens which incorporates a plano-convex lens and a plano-concave lens.

This lens of Arai is a projection lens for a television projector and bears no relationship to the appellants' invention which includes an image projection module in the context of a surgical microscope. The lens of Arai is for projecting a television image onto a screen and is not disposed between an image display unit and a beam splitter. However, the conclusion is drawn in the action that it would be obvious to one of ordinary skill in the art to make use of the projection lens assembly of Arai even though this lens is for a very different purpose in an art bearing no association whatsoever to surgical

microscopes.

In the advisory action, this argument is countered with the statement that:

> "In this case, the prior art is reasonably pertinent to the particular problem with which the applicant was concerned, i.e. projecting an image in an optical system." (emphasis added)

Appellants submit that the person of ordinary skill would not know the particular problem with which the appellants were concerned unless this problem was suggested in the combination of Miyagi and Zonneveld and no indication is given where, in these references, our person of ordinary skill would come upon the idea that there is this particular problem.

In addition, no suggestion is made in the action that the projection lens of Arai would really work in the context of the surgical microscope of appellants' claim 51 or 52. Also, there is no indication in the action why our person of ordinary skill would be motivated by the combined teachings of Miyagi and Zonneveld to seek out a projection lense for a television projector and attempt to integrate this into any image projection module of these references to come up with the appellants' invention as carefully defined in claim 51.

Ernstoff et al was also applied against claims 51 and 52 and this reference is directed to a liquid crystal sequential color display. In the final action mailed, the view is expressed that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff et al as a display means in the system of Miyagi in view of Zonneveld and Arai.

In the advisory action, an argument analogous to Arai is advanced with respect to Ernstoff et al, namely:

> "In this case, the prior art is reasonably pertinent to the particular problem with which the applicant was concerned, i.e. displaying an image with a reflection display with a rotatably mounted filter and driven by a clock frequency." (emphasis added)

Appellants call attention to the fact that none of these references provide any hint as to the particular problem noted above so that our person of ordinary skill could not be led to configure the image display unit to have a reflection display driven at clock frequency as set forth in claims 51 and 52 with the clause:

> "said image display unit having a reflection display driven at a clock frequency and including a rotatably mounted filter wheel for illuminating said reflection display; and, a device for synchronizing the rotation of said filter wheel with said clock frequency of said reflection display."

from the combined teachings of Miyagi and Zonneveld.

The action is silent as to what in Miyagi or Zonneveld would suggest to our person of ordinary skill to conduct a search leading to Ernstoff et al. There is really no motivation in the applied references which would send our person of ordinary skill to look for a reference like Ernstoff et al. Indeed, as with Arai, Ernstoff et al too bears no relationship to the area of surgical microscopes and appellants submit that their disclosure should not be used as a roadmap for piecing together their invention from unrelated areas of the prior art. Indeed, the

suggestion should come from the applied references.

In view of the above, and especially in view of the inadequacy of the combination of Miyagi and Zonneveld as shown with respect to claim 41, claims 51 and 52 should now too patentably distinguish the appellants' invention over the combination of Miyagi, Zonneveld, Arai and Ernstoff et al and be allowable.

Conclusion

The appellants have shown that independent claim 41 patentably distinguishes their invention over the applied references, Miyagi and Zonneveld, and should therefore be allowable. Claims 42 to 50 are all dependent directly or indirectly from claim 41 so that they too should be allowable. The appellants have also shown that independent claims 51 and 52 patentably distinguish their invention over this combination of references in view of Arai and Ernstoff et al so that these two claims should also be allowable.

Accordingly, appellants submit that the Examiner's final rejection of pending claims 41 to 52 is erroneous and respectfully request that her decision be reversed.

Respectfully submitted,

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Date: January 13, 2009

Claims Appendix

The appealed claims are claims 41 to 52 of which claims 41, 51 and 52 are in independent form.

41. A surgical microscope comprising:

a viewing unit for viewing an object and said viewing unit defining a viewing beam path;

an image data supply for supplying image data;

an image projection module connected to said image data supply for receiving said image data and inputting said image data into said viewing beam path;

said image projection module including an image display unit for displaying said image data;

a first beam splitter mounted in said viewing beam path for receiving said image data displayed by said display unit and passing said image data into said viewing beam path;

an image recording module for recording said image data and an object image of said object supplied by said viewing unit;

said image recording module including an image sensor;

a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor;

said image sensor generating an image signal from said object image;

said image recording module further including a mixer connected to said image sensor for receiving said image signal and being connected to said image data supply for receiving said image data to mix said image signal and said image data and generate an output signal;

a video-recorder/monitor connected to said mixer for receiving said output signal for display to a surgeon; and,

a shutter interposed between said first beam splitter and said object to suppress said object image to facilitate viewing said image data in said viewing unit.

42. The surgical microscope of claim 41, said image projection module further including an imaging optic having a plano-convex lens and a plano-concave lens mounted downstream of said image display unit for transmitting said image data to said first beam splitter.

43. The surgical microscope of claim 42, wherein said plano-concave lens is disposed downstream of said image display unit and said plano-convex lens is interposed between said plano-concave lens and said first beam splitter.

44. The surgical microscope of claim 43, wherein said image display unit is an LCD image display unit.

45. The surgical microscope of claim 44, wherein said plano-convex lens has a first focal length and said plano-concave lens has a second focal length; and, the ratio of said first focal length and said second focal length lies within a range from 1.9 to 2.5.

46. The surgical microscope of claim 45, wherein said plano-convex lens is a first plano-convex lens; said image projection unit further includes a concave-convex lens and a second plano-convex lens; and, said first plano-convex lens, said plano-concave lens, said concave-convex lens and said second plano-convex lens all are arranged between said LCD image display unit and said first beam splitter.

47. The surgical microscope of claim 44, wherein the brightness of said LCD image display unit is increased by providing a time-dependent sequential illumination of a reflection display with only a single color.

48. The surgical microscope of claim 44, wherein said LCD image display unit includes a reflection display illuminated sequentially with different colors as a function of time.

49. The surgical microscope of claim 41, wherein said image sensor is a CCD chip.

50. The surgical microscope of claim 41, wherein said image display unit incorporates a reflection display driven at a clock frequency and includes a rotatably mounted filter wheel for illuminating said reflection display; and, a device for synchronizing the rotation of said filter wheel with said clock frequency of said reflection display.

51. A surgical microscope comprising:

a viewing unit for viewing an object and said viewing unit defining a viewing beam path;

an image data supply for supplying image data;

an image projection module connected to said image data supply for receiving said image data and inputting said image data into said viewing beam path;

said image projection module including an image display unit for displaying said image data;

a first beam splitter mounted in said viewing beam path for receiving said image data displayed by said display unit and

passing said image data into said viewing beam path;

an image recording module for recording said image data and an object image of said object supplied by said viewing unit;

said image recording module including an image sensor;

a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor;

said image sensor generating an image signal from said object image;

said image recording module further including a mixer connected to said image sensor for receiving said image signal and being connected to said image data supply for receiving said image data to mix said image signal and said image data and generate an output signal;

a video-recorder/monitor connected to said mixer for receiving said output signal for display to a surgeon;

said image projection module further including an imaging optic having a plano-convex lens and a plano-concave lens mounted downstream of said image display unit for transmitting said image data to said first beam splitter; and,

said image display unit having a reflection display driven at a clock frequency and including a rotatably mounted filter wheel for illuminating said reflection display; and, a device for synchronizing the rotation of said filter wheel with said clock frequency of said reflection display.

52. A surgical microscope comprising:

a viewing unit for viewing an object and said viewing unit defining a viewing beam path;

an image data supply for supplying image data;

an image projection module connected to said image data supply for receiving said image data and inputting said image

data into said viewing beam path;

said image projection module including an image display unit for displaying said image data;

a first beam splitter mounted in said viewing beam path for receiving said image data displayed by said display unit and passing said image data into said viewing beam path;

an image recording module for recording said image data and an object image of said object supplied by said viewing unit;

said image recording module including an image sensor;

a second beam splitter mounted in said viewing beam path for directing said object image onto said image sensor;

said image sensor generating an image signal from said object image;

said image recording module further including a mixer connected to said image sensor for receiving said image signal and being connected to said image data supply for receiving said image data to mix said image signal and said image data and generate an output signal;

a video-recorder/monitor connected to said mixer for receiving said output signal for display to a surgeon;

a shutter interposed between said first beam splitter and said object to suppress said object image to facilitate viewing said image data in said viewing unit;

said image projection module further including an imaging optic having a plano-convex lens and a plano-concave lens mounted downstream of said image display unit for transmitting said image data to said first beam splitter; and,

said image display unit having a reflection display driven at a clock frequency and including a rotatably mounted filter wheel for illuminating said reflection display; and, a device for synchronizing the rotation of said filter wheel with said clock

frequency of said reflection display.

Evidence Appendix

None.

Related Appeals and Interferences Appendix

None.